



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,328	07/23/2003	Sebastien Weitbruch	PD020074	7767

24498 7590 03/14/2007  
JOSEPH J. LAKS, VICE PRESIDENT  
THOMSON LICENSING LLC  
PATENT OPERATIONS  
PO BOX 5312  
PRINCETON, NJ 08543-5312

EXAMINER
----------

CASCHERA, ANTONIO A

ART UNIT	PAPER NUMBER
----------	--------------

2628

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/14/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/625,328	Applicant(s) WEITBRUCH ET AL.	
	Examiner Antonio A. Caschera	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-7 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In reference to claims 1 and 7, the language of the claims raises questions as to whether the claims (claims 1, 7 and all of their dependent claims, respectively) are directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Specifically, the, “method for processing video data for display...” of claims 1 and 7, is the abstract idea, which could be implemented without the use of any type of machine and does not produce any tangible results. For example, although the claims do disclose “outputting”, the claims do not actually claim outputting or displaying the processed video data on some type of display device. Therefore, the claims still do not produce a tangible result(s) as seen by the current policies and procedures of the Office. See MPEP 2106 IV (B)(1).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 6,421,466 B1) in view of Frey (U.S. Patent 5,925,875).

In reference to claim 1, Lin discloses a method for processing video data (see column 1, lines 5-8 and column 6, lines 26-31) for display on a display device having a plurality of luminous elements (column 5, lines 61-64 disclose the display as having luminous elements) by applying a dithering function to at least part of said video data to refine the grey scale portrayal of video pictures of said video data (see column 8, lines 18-23). Note, the Office interprets that the dithering of Lin inherently "refines" grey scale values of video data since the "Y" or luminous component of the pixel data is kept throughout the pixel manipulation processing (see column 8, lines 12-14). Lin further discloses computing at least one motion vector from said video data (see column 7, lines 1-17) and outputting the vector back into an encoded video stream as a substitute for that block of video data (see column 4, lines 45-49). Although Lin does disclose calculating motion estimation vectors from the video data, Lin does not explicitly disclose changing at least one of the phase, amplitude, spatial resolution and temporal resolution of the dithering in accordance with the calculated motion vector. Frey discloses an apparatus and method using a dithering device to correct for differences in image detectors (see column 1, lines

13-16). Frey discloses the dithering device filtering an image performing scene-to-scene registration to measure the object space motion and to estimate a dither pattern from that motion (see column 10, lines 33-45 and Figure 12). Frey further discloses the scene-to-scene registration estimating the dither pattern by shifting a reference image signal relative to a previous image frame by a number of pixels (see column 10, lines 51-53). Note, the Office interprets such shifting of the reference image signal functionally equivalent to a change in spatial resolution of the dither pattern since the dither pattern of Frey is directly related to the correlation of the shifted image with previous image frame data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the dither pattern modification based upon motion estimation techniques of Frey with the dithering and motion vector calculation techniques of Lin in order to adjust the dithering process on a scene-by-scene basis thereby creating a more precise dithering mechanism in video systems (see column 3, lines 51-60 of Frey). (further see *Response to Arguments* below).

In reference to claim 2, Lin and Frey disclose all of the claim limitations as applied to claim 1 above. Frey further discloses the scene-to-scene registration estimating the dither pattern by shifting a reference image signal relative to a previous image frame by a number of pixels (see column 10, lines 51-53). Note, the Office interprets such shifting of the reference image signal functionally equivalent to a change in spatial resolution of the dither pattern since the dither pattern of Frey is directly related to the correlation of the shifted image with previous image frame data. Further, the Office interprets the shifting of Frey to inherently provide shifting in two dimensions (x, y or 2D dimensions of screen space, see also, column 12, lines 43-

Art Unit: 2628

48) and since Frey discloses comparing the current image to a previous image frame, the Office Frey to also disclose the dithering to incorporate a single temporal dimension.

In reference to claim 4, Lin and Frey disclose all of the claim limitations as applied to claim 1 above. Since Lin discloses that the “Y” or luminous component of the pixel data is kept throughout the pixel manipulation processing (see column 8, lines 12-14), the Office interprets Lin to disclose the dithering function based on single luminous elements.

In reference to claim 5, Lin and Frey disclose all of the claim limitations as applied to claim 1 above in addition, Lin explicitly discloses performing pixel-width reduction from 8 to 6 bits (see column 8, lines 15-18) which the Office interprets equivalent to a 2-bit dithering.

In reference to claim 6, Lin and Frey disclose all of the claim limitations as applied to claim 1 above. Lin discloses wherein said at least one motion vector is defined for each pixel or cell individually (see columns 6-7, lines 40-17 wherein the details of the motion vector computation for each pixel is disclosed).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 6,421,466 B1), Frey (U.S. Patent 5,925,875) and further in view of Correa et al. (EP1136974 A1).

In reference to claim 3, Lin and Frey disclose all of the claim limitations as applied to claim 1 above. Neither Lin nor Frey explicitly disclose the dithering function including the application of a plurality of masks. Correa discloses a method for processing video data for display on a display device wherein dithering is applied and the dithering function includes the application of a plurality of masks (see page 9, paragraph 0038). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the dithering

masks of Correa with the dither pattern modification and motion estimation techniques of Frey and dithering/motion vector calculation techniques of Lin in order in order to enhance the portrayal of grey scale values in video by adding an appropriate mask dither signal to the video signal (see page 2, paragraph 10 of Correa).

***Response to Arguments***

5. Applicant's arguments filed 01/19/07 have been fully considered but they are not persuasive.

In reference to claims 1-7, Applicant argues the previous 35 USC 101 rejection and has made amendments to the claims to remedy the previously mentioned 35 USC 101 issues (see page 4 of Applicant's Remarks) however these amendments are unsatisfactory to overcome the 35 USC 101 rejection. Specifically, although the amendments do now include the limitation of "outputting the dithered video data," there is still no indication that the outputting is actually "displaying" and further there is no display device/unit tied to such displaying of video data. Therefore, the Office maintains the 35 USC 101 rejection as seen above.

In reference to claims 1-6, Applicant argues that neither of the references, Lin nor Frey, explicitly disclose that the dithering refines the grey scale portrayal of video pictures of video data (see pages 5-7 of Applicant's Remarks). Applicant provides a dictionary entry for the word, "refine" and goes on to ask the Examiner to provide a concise explanation of how averaging pixel values to achieve compression makes the grey scale portrayal of a video picture "more fine or polished" (see pages 5-6 of Applicant's Remarks).

Firstly, the Office has interpreted the teachings of Lin in view of the below definition of the word, “refine” taken from Merriam-Webster’s Collegiate Dictionary, 10<sup>th</sup> ed.: “refine: 4 : to reduce in vigor or intensity,” (see page 979 of Merriam-Webster’s Collegiate Dictionary, 10<sup>th</sup> ed, Merriam-Webster, Inc © 2002). Lin explicitly discloses dithering when performing motion estimation using reduced-width pixels (see Figures 8A, 8A). Lin discloses utilizing pixel bits that solely contain the Y or luminance or intensity component of YUV pixels (see column 8, lines 12-14). Lin further discloses that pixels are first averaged to produce a lower resolution and then bit-reduced or compressed (see column 8, lines 7-33). The Office interprets that since the luminance or Y data is solely being processed, and further that such processing in Lin regarding Y data is firstly averaged from a 2x2 block of pixels to 1 pixel, and then bit-reduced from 8 bits to 6 bits, that the “grey scale portrayal” of data in Lin is “refined” or “reduced in intensity” since such pixel averaging and further bit-width reduction supplies a lower resolution and furthermore a lower intensity pixel value. Therefore, the Office interprets the combination of Lin, Frey and Correa to disclose all of the claim limitations as found in claims 1-6 and maintains such prior art and rejections.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO



Art Unit: 2628

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung, can be reached at (571) 272-7794.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**571-273-8300 (Central Fax)**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

aac

  
3/9/07

**Antonio Caschera**  
Patent Examiner

  
KEE M. TUNG  
SUPERVISORY PATENT EXAMINER